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12410 MILESTONE CENTER DRIVE
4TH FLOOR
GERMANTOWN, MD 20876
PHONE: (301) 357-9403

**RAMEY KEMP
&
ASSOCIATES, INC.**
Transportation Engineers
6808 Faringdon Place, Suite 100
Raleigh, North Carolina 27609
919-872-8116 Tel. 919-878-6416 Fax.
www.rameykemp.com

758 Greenfield Place, Garner, NC 27529

SCALE

NONE

SR 1005 (Six Forks Road)
at
Rowan Street

Division 5 Wake County Raleigh
PLAN DATE: Dec 2008 REVIEWED BY: [Signature]
PREPARED BY: [Signature] RKA PROJ. NO.: 08232 (040)

REVISIONS	INIT.	DATE

1-07-2009
SIGNATURE DATE
SIG. INVENTORY NO. 05-0001

CAMERA & CONDUIT LOCATION - ID

(Not To Scale)

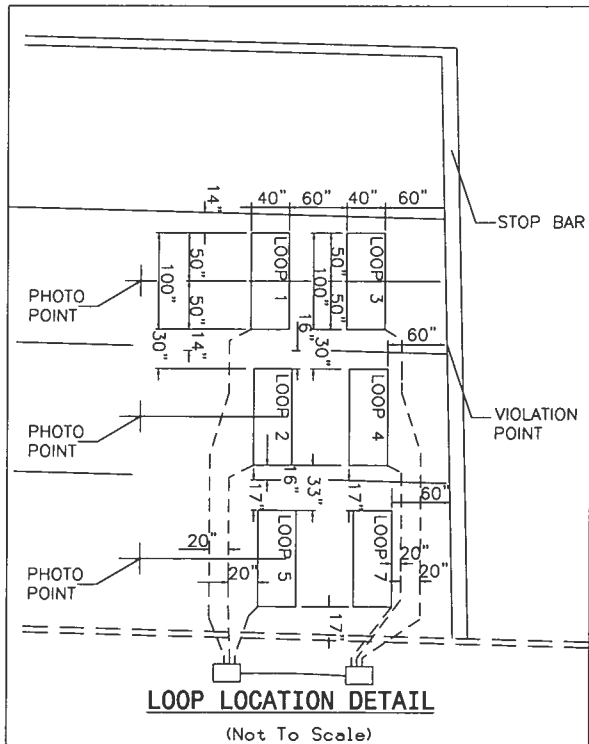
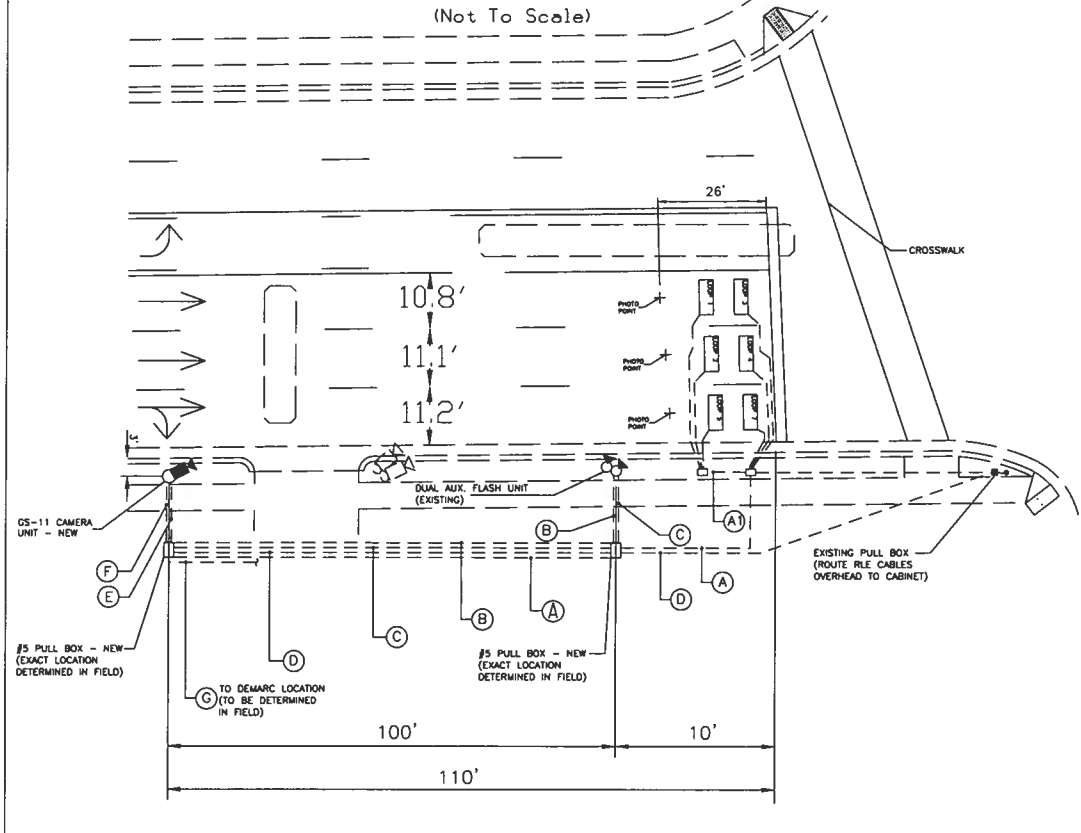
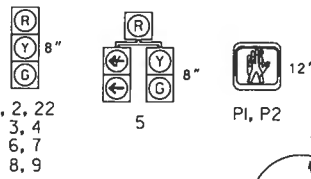


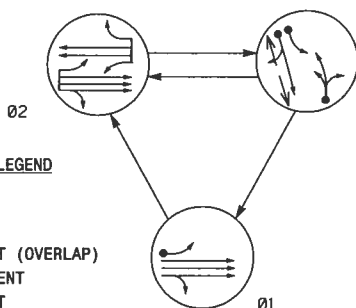
TABLE OF OPERATION

SIGNAL FACE	PHASE			FLASH
	Ø 1	Ø 2	Ø 3	
1, 2, 22	R	G	R	Y
3, 4	G	G	R	Y
5	G	G	R	Y
6, 7	R	R	G	R
8, 9	R	R	G	R
PI, P2	DW	DW	W	DRK

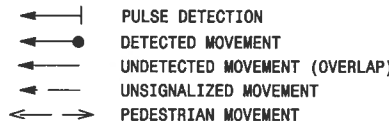
SIGNAL FACE I.D.



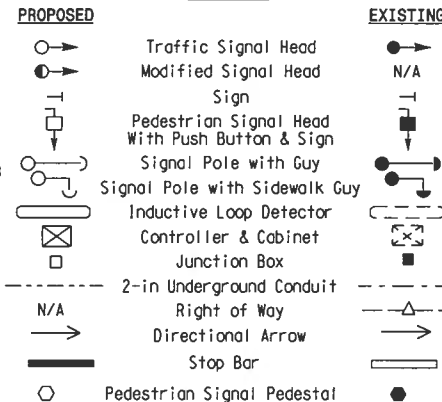
PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND



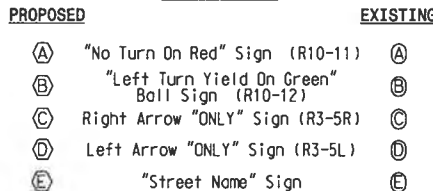
LEGEND



TIMING CHART

PHASE	Ø1	Ø2	Ø3
MINIMUM GREEN	5 SEC.	15 SEC.	5 SEC.
PASSAGE GAP	1.0 SEC.	3.0 SEC.	2.0 SEC.
YELLOW CHANGE INT.	4.0 SEC.	4.0 SEC.	4.0 SEC.
RED CLEARANCE	2.0 SEC.	2.0 SEC.	2.5 SEC.
MAX. 1	10 SEC.	25 SEC.	30 SEC.
MAX. 2	40 SEC.	40 SEC.	40 SEC.
RECALL POSITION	NONE	MIN. RECALL	NONE
VEHI. CALL MEMORY	NONLOCK	LOCK	NONLOCK
WALK	SEC.	1.0 SEC.	5 SEC.
FLASHING DON'T WALK	SEC.	1.0 SEC.	12 SEC.

SIGN I.D.



CONDUIT SCHEDULE

LETTER	CONDUIT SIZE	CONDUIT CONSTRUCTION	TYPE OF SERVICE	EQUIPMENT SERVICED	CABLE QUANTITY	CABLE DETAILS
A	2"	PVC	COMMS	LOOPS 1, 2, 3, 4, 5, 7	6	5
A1	2"	PVC	COMMS	LOOPS 3, 4, 7	3	5
B	2"	PVC	COMMS	DUAL AUX FLASH UNIT	2	4
C	2"	PVC	POWER	DUAL AUX FLASH UNIT	6	1
D	2"	PVC	POWER	CAMERA UNIT POWER, RED/YELLOW PHASE CONTROL	3	3 1
E	2"	PVC	POWER	GS-II UNIT	3	3 9 1
F	2"	PVC	COMMS	GS-II UNIT	2	4 6 5 1 4A
G	2"	PVC	COMMS	TO D-MARC LOCATION	1	4A

NOTES

- ACS TO PROVIDE CAMERA POLE AND CAMERA UNIT, SUBCONTRACTOR TO PROVIDE PELCO FOUNDATION. POLES SHALL BE FIELD LOCATED AND SHALL BE 36" MINIMUM FROM FACE OF CURB TO CENTER OF BASE, SEE DETAIL. LOCATION OF EQUIPMENT SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.
- INSTALL TO LOCAL AND NEC SPECIFICATIONS.
- EACH POLE SHALL BE GROUNDED WITH #10 SOLID GROUND WIRE AND 10' GROUND ROD.
- CONTRACTOR SHALL HAND DIG POLE FOUNDATION FOR ACS CAMERA OR FLASH UNIT POLES.
- CONDUIT SHALL BE INSTALLED BY MEANS OF TRENCHING, TRENCHING SHALL BE IN ACCORDANCE TO CURRENT DOT STANDARD SPECIFICATIONS.
- CONTRACTOR SHALL MODIFY EXISTING 120VAC SERVICE, A DUPLEX OUTLET SHALL BE INCLUDED FOR ACCESS BY DOT PERSONNEL.
- INSTALL NEW PULL BOX - SEE GENERAL NOTES #10, SHEET SIG-1.
- CONTRACTOR TO CLEAN UP DEBRIS AROUND WORK AREA AND RESTORE LANDSCAPE.
- INSTALL IN-LINE FUSE HOLDERS RATED AT 20 AMPS FOR POWER.
- INSTALL IN-LINE FUSE HOLDERS RATED AT 5 AMPS FOR PHASE CONDUCTORS.
- INSTALL IN-LINE FUSE HOLDERS RATED AT 15 AMPS FOR EACH AUX FLASH POWER.
- CONTRACTOR SHALL REPAIR AND REPLACE SIDEWALK IN KIND AS REQUIRED TO INSTALL EQUIPMENT AND CONDUITS.

CABLE SCHEDULE

- #14 AWG THHN
- #12 AWG THHN
- #10 AWG THHN
- IMSA 40-2, 3 PAIR 19AWG w/ POLYETHYLENE JACKET (COMMS CABLE)
- CAT-5e (BELDEN 7919A OR EQUIVALENT)
- IMSA 50-2, 12 AWG
- IMSA 51-7, 14 AWG
- 12 STRAND FIBER OPTIC CABLE
- RG-59 VIDEO CABLE



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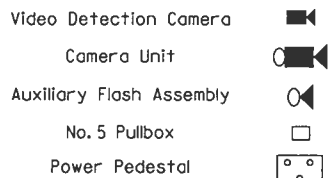


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LOOP & DETECTOR UNIT INSTALLATION CHART

INDUCTIVE LOOPS				DETECTOR UNITS			
LOOP NO.	SIZE (ft)	TURNS	DIST. FROM STOPBAR (ft)	UNIT NO.	NEW EXISTING	NEMA PHASE	TIMING
1	6'X26'	Existing	90'	X	X	Ø2	SEC.
2	6'X40'	Existing	90'	X	X	Ø2	SEC.
3	6'X45'	2-4-2	0'	X	X	Ø3	SEC.
4	6'X60'	2-4-2	+20'	X	X	Ø3	SEC.
4A	6'X60'	Existing	+20'	X	UNK	Ø3	SEC.
5	6'X60'	Existing	+5'	X	X	Ø1	SEC.

RED LIGHT CAMERA LEGEND



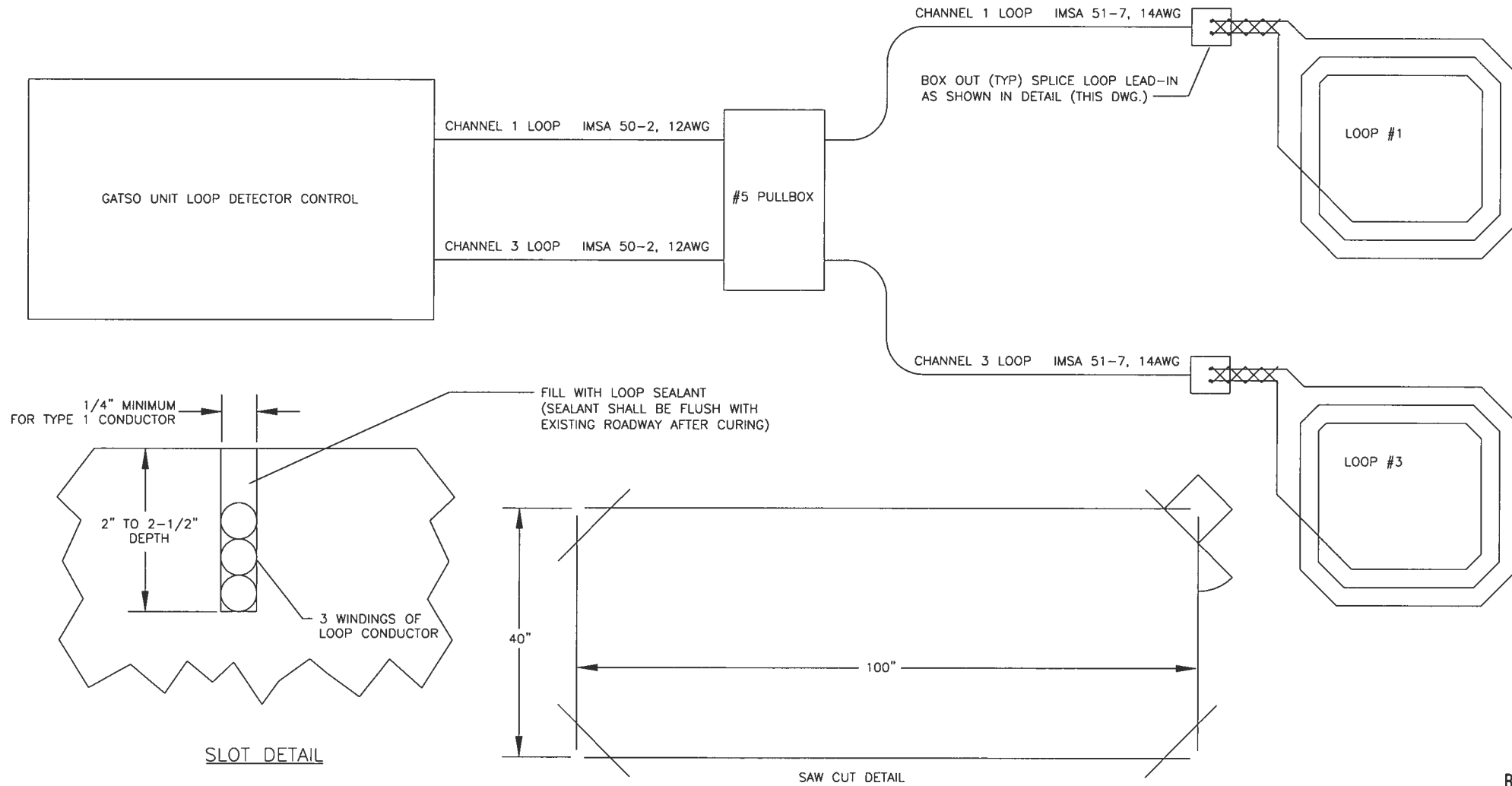
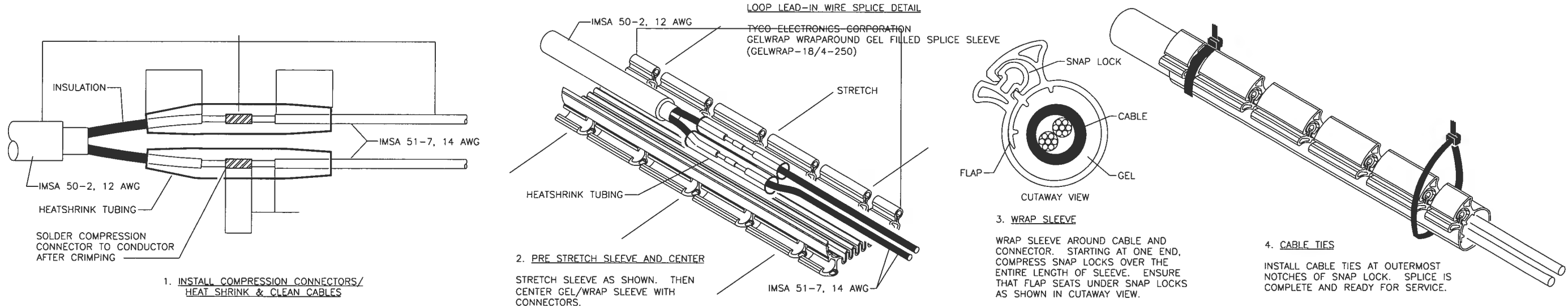
Red Light Camera Installation - Site Plan

Prepared for:
SR 1005 (Six Forks Road) at Rowan Street

Division 5 Wake County Raleigh
PLAN DATE: Dec 2008 REVIEWED BY: [Signature]
PREPARED BY: [Signature] RKA PROJ. NO.: 08232 (040)

Scale: 1" = 40'



Signature: [Signature] Date: 10-4-2009
S.I.G. INVENTORY NO. 05-0001

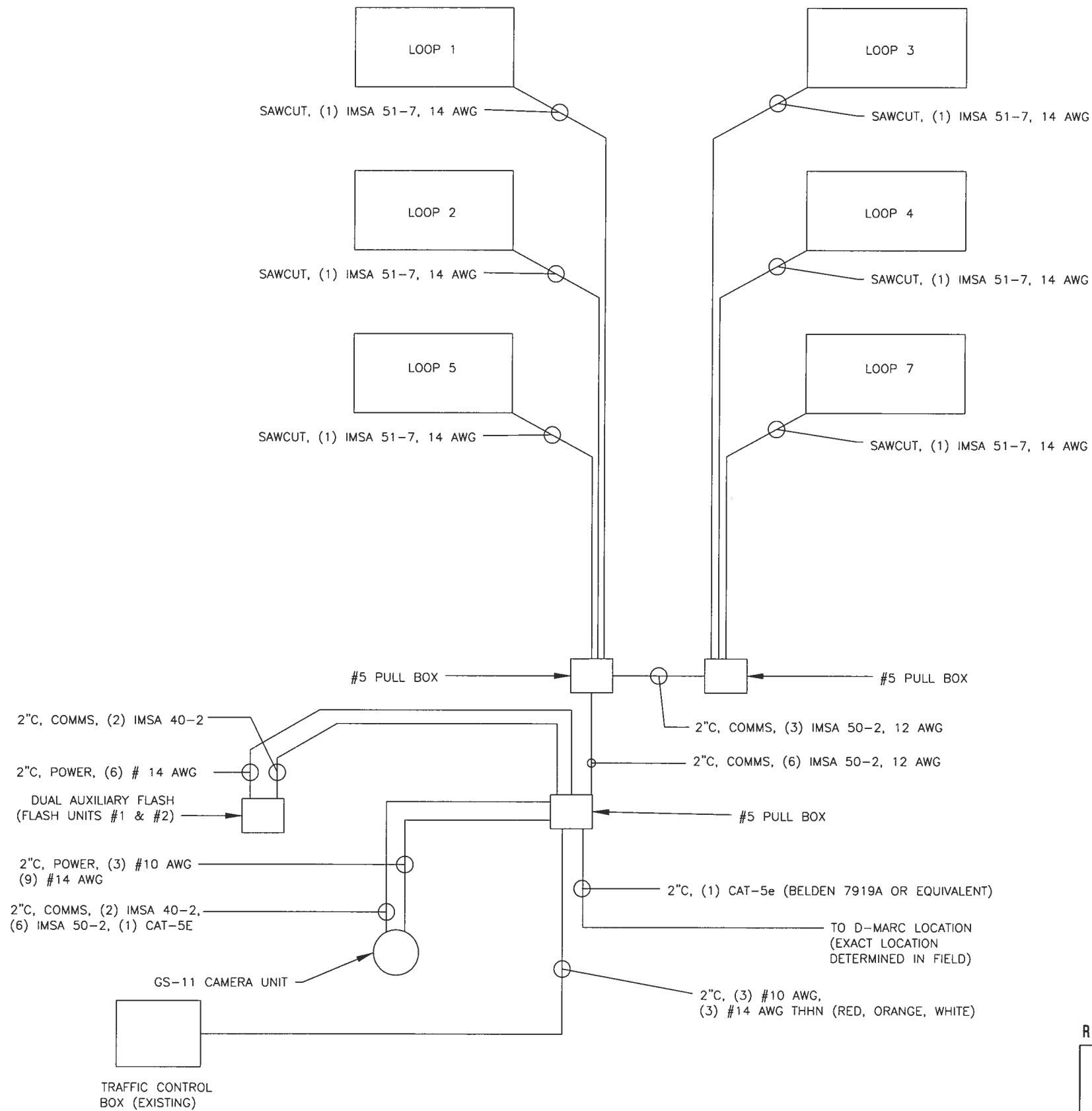


NOTES:

1. SAWCUT LOOP LEAD-IN WIRE TRENCH WITH A UNIFORM 1/4" WIDE SLOT WITH A DEPTH BETWEEN 2" AND 2-1/2". (SEE DETAIL)
2. CUT 6" LENGTH x 1/4" WIDE SLOTS AT THE SAME DEPTH AS STRAIGHT SAWCUTS IN EACH CORNER AS SHOWN IN DRAWING AND REMOVE ALL DEBRIS FROM SAWCUT PRIOR TO INSTALLING LOOP WIRE.
3. SPLICE IN LOOP WIRE ARE NOT PERMITTED. THERE SHALL BE 3 TURNS AS SHOWN IN DETAIL.
4. FROM THE LEAD-IN SLOT TO THE POINT OF TERMINATION TO THE IMSA 51-7, 14 AWG, THE 2 LOOP WIRES SHALL BE TWISTED WITH A MINIMUM OF 4 TWISTS PER FOOT.
5. EACH LOOP CONFIGURATION WILL BE INDIVIDUALLY CABLED TO THE RLC POLE. THE DLC CABLES TO THE RLC WILL BE KEPT AS SHORT AS POSSIBLE AND THEY WILL GO IN A STRAIGHT RUN FROM THE PULL BOX TO THE RLC POLE. THE BARE WIRED DRAIN WIRE WILL BE TERMINATED IN THE RLC POLE AT THE TERMINAL BLOCK GROUND CONNECTION.

Red Light Camera Installation - Loop Installation Details

Prepared for:  The University of North Carolina Survey and Geomatics Section 758 Greenfield Place, Garner, NC 27529	SR 1005 (Six Forks Road) at Rowan Street			SEAL 
	Division 5	Wake County	Raleigh	
	PLAN DATE: Dec 2008	REVIEWED BY: [Redacted]		
	PREPARED BY: [Redacted]	RKA PROJ. NO.: 08232 (040)		
SCALE	REVISIONS	INIT.	DATE	
NONE				
				104-2009 SIGNATURE DATE SIG. INVENTORY NO. 05-0001



*NOTE: DIAGRAM IS TO ILLUSTRATE WIRING CONNECTIONS ONLY. SEE SHEET SIG-2 FOR CORRECT LOCATION OF LOOPS.

Red Light Camera Installation - Single Line Diagram

1-04-2001

ACS
Germantown, MD

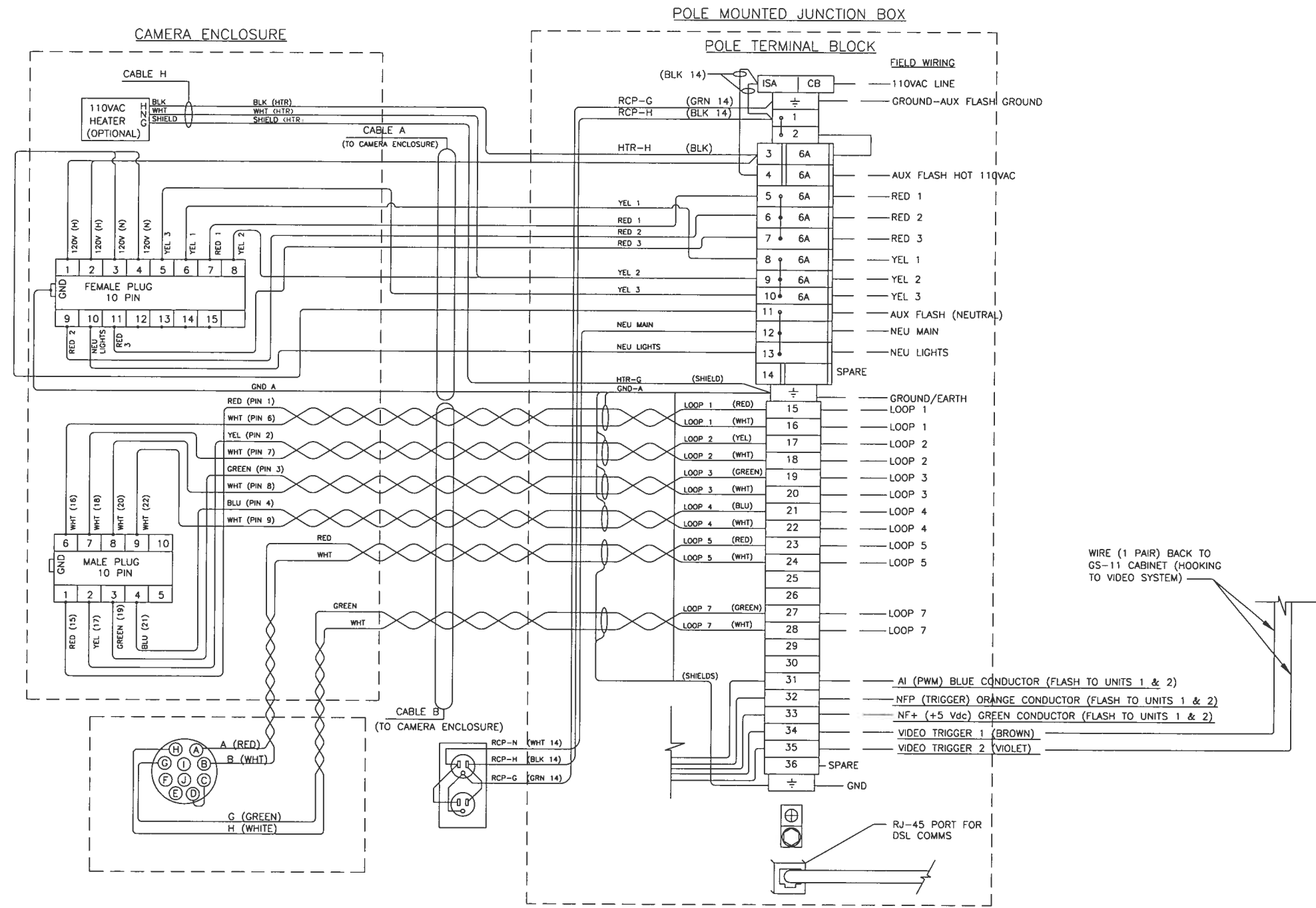
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Prepared for:
Traffic Engineering and Safety Services
DIVISION OF TRANSPORTATION
Safety and Geometric Services
750 Greenfield Place, Garner, NC 27529
SCALE
NONE

SR 1005 (Six Forks Road)
at
Rowan Street
Division 5 Wake County Raleigh
PLAN DATE: Dec 2008 REVIEWED BY: [REDACTED]
PREPARED BY: [REDACTED] RKA PROJ. NO.: 08232 (040)
REVISIONS
INIT. DATE
1-04-2001

SEAL
SIGNATURE
DATE
SIG. INVENTORY NO. 05-0001




GS-11: WIRING DIAGRAM

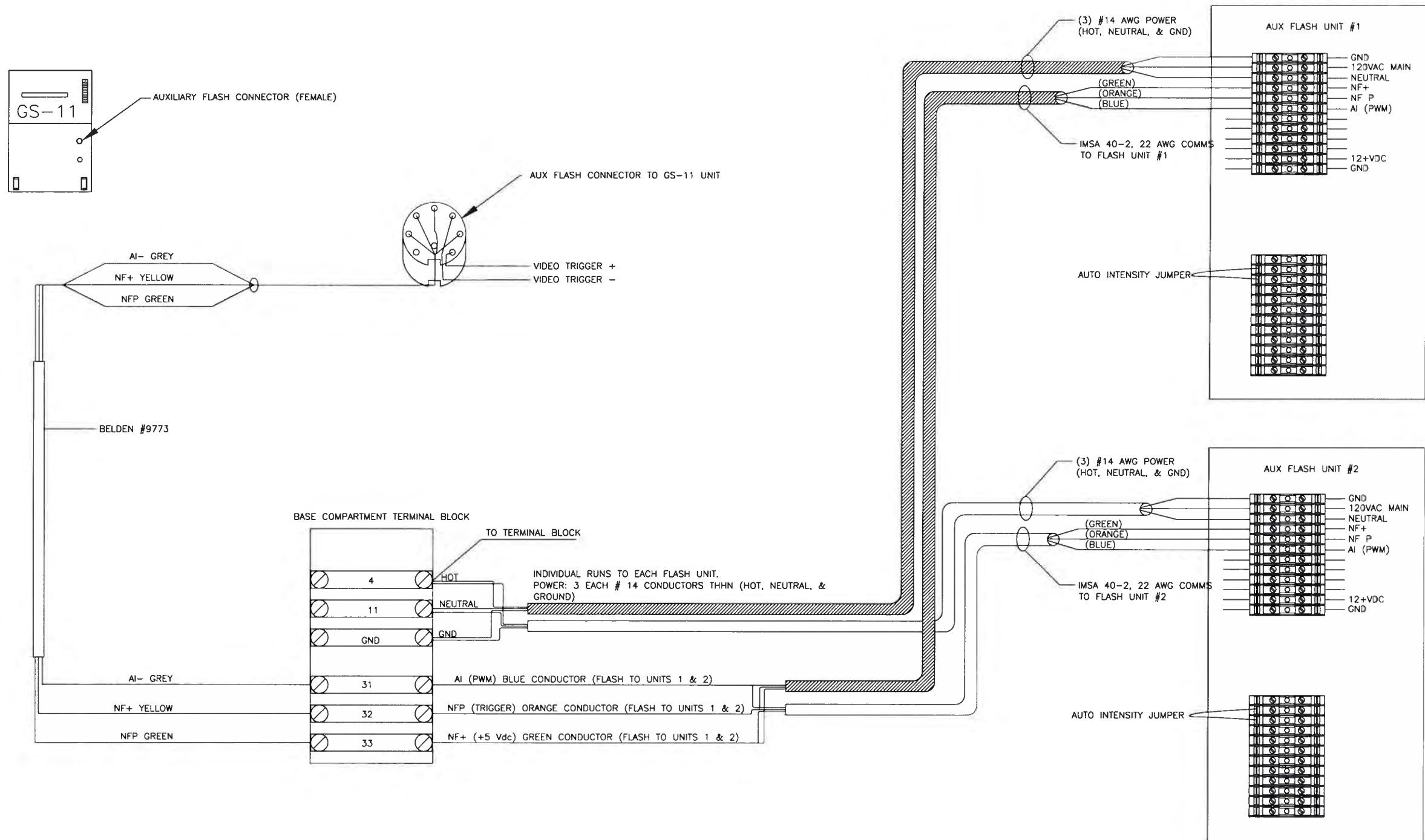
Red Light Camera Installation - Camera Unit Terminal Strip Wiring Details

*****SYTIME*****
*****DOING*****

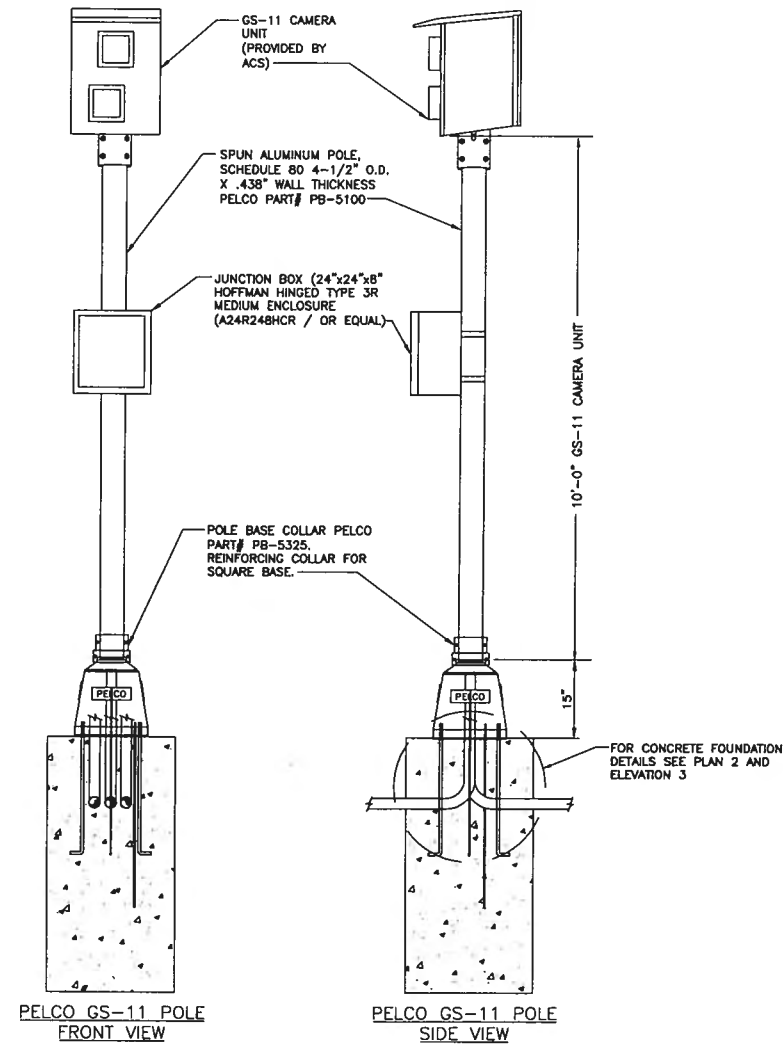
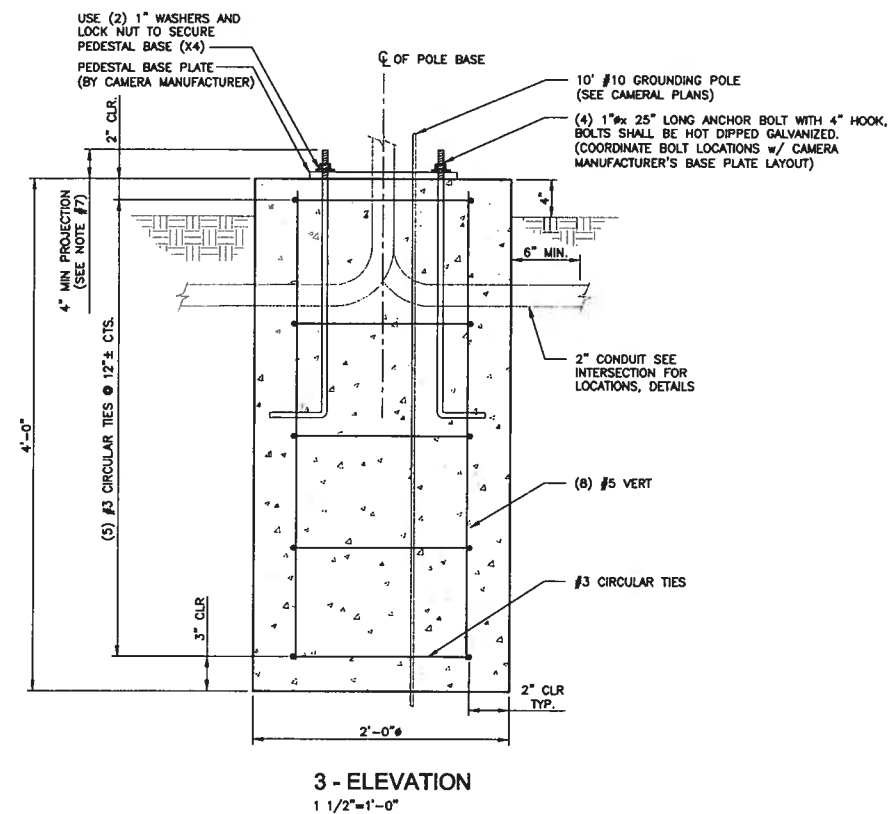
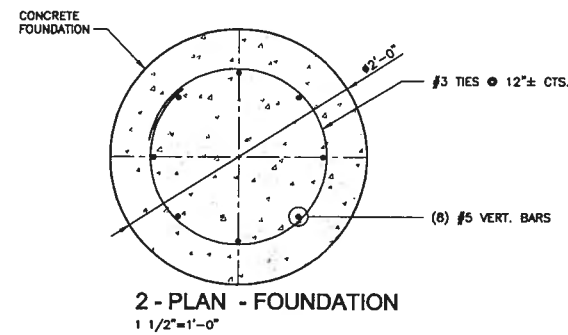
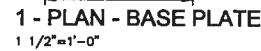
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 758 Greenfield Place, Garner, NC 27529	SR 1005 (Six Forks Road) at Rowan Street		SEAL
	Division 5	Wake County	Raleigh
	PLAN DATE: Dec 2008	REVIEWED BY: [Signature]	
	PREPARED BY: [Signature]	RKA PROJ. NO.: 08232 (040)	
SCALE	REVISIONS	INIT.	DATE
NONE			
SIGNATURE			DATE
SIG. INVENTORY NO. 05-0001			



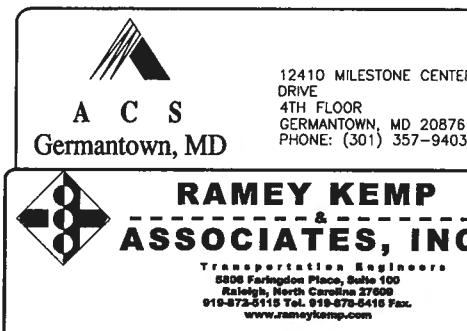
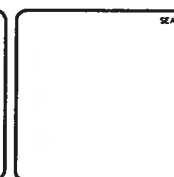
Red Light Camera Installation - Flash Unit to Camera Pole Wiring Details



4 - ELEVATION
N.T.S.
FOR REFERENCE

NOTES:

1. ALL CONCRETE SHALL BE 28 DAY COMPRESSIVE STRENGTH $f_c = 4000$ PSI.
2. ALL REINFORCING STEEL SHALL BE ASTM 615, GRADE 60.
3. THE PLACEMENT OF CONCRETE AND RE-BAR SHALL CONFORM TO THE REQUIREMENTS OF ACI 318 (LATEST EDITION).
4. ALL ANCHOR BOLTS SHALL BE A-307 OR A-36 GRADE STEEL.
5. CONTRACTOR SHALL PROTECT EXCAVATIONS FROM INCLEMENT WEATHER UNTIL CONCRETE HAS BEEN POURED.
6. FOUNDATION MAY BE USED FOR PELCO GPS CAMERA OR AUXILIARY FLASH UNIT.
7. CONTRACTOR TO VERIFY BOLT PROJECTION IN FIELD BEFORE INSTALLATION OF SHAFT.
8. CONTRACTOR MAY SHIFT LOCATION OF TIES AS NECESSARY TO AVOID CONFLICT WITH CONDUIT.
9. CAMERA FOUNDATION SHALL BEAR IN SOIL SUITABLE FOR 2,000 PSF BEARING CAPACITY. SHOULD UNSTABLE MATERIAL BE ENCOUNTERED AT THE BOTTOM OF THE EXCAVATION, THE FOUNDATION DEPTH MAY BE EXTENDED TO FIRM MATERIAL.

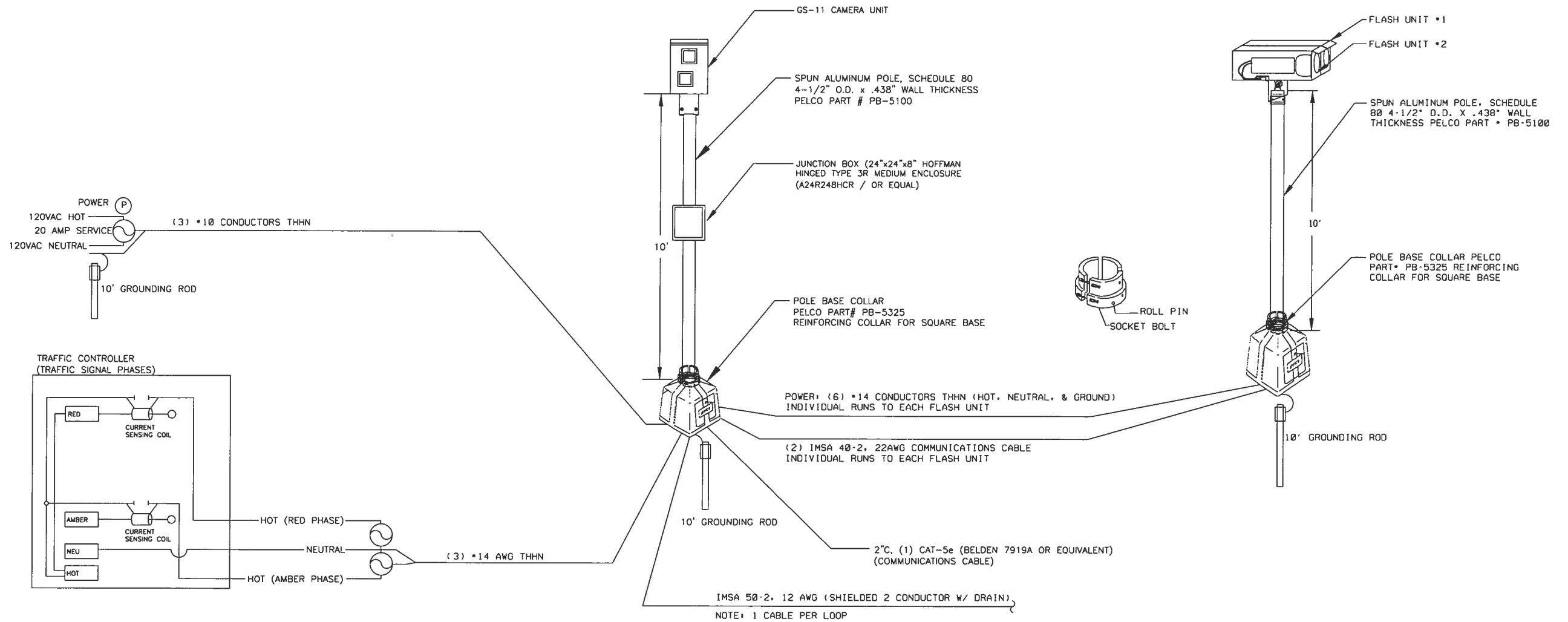
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REINFORCED CONCRETE BASE
SR 1005 (SIX FORKS ROAD)
© ROWAN STREET

DATE: DECEMBER 2008	SCALE	MAC FILE NUMBER
WCE PROJ. # 1093-0027	HORIZONTAL:	DRAWING NUMBER
DRAWN EJB	AS NOTED	Sig-7
DESIGNED CHG	VERTICAL:	
CHECKED CHG	NA	
PROJ. MGR. CHG		
STATUS: REVISION		
ISSUED FOR REVIEW		

Sig-8

SUBCONTRACTOR MUST NOTIFY THE BELOW LISTED AGENCY AT
LEAST THREE (3) WORKING DAYS PRIOR TO COMMENCEMENT OF
NORTH CAROLINA ONE CALL CENTER.
1-800-632-4949



Red Light Camera Installation - Camera Unit/Dual Flash Configuration

[illegible]